

Git e Github

Semana 2

Usando o git localmente



Recapitulando...



Conceitos Chave

O que pode ser versionado?

Qualquer tipo de arquivo digital.

Qual a função do comando *diff*?

Mostrar as diferenças entre dois arquivos.

O que é um histórico de cópias?

Método ultrapassado de manter um histórico de alterações em arquivos digitais.

O que a flag *-u* trás a mais para o comando *diff*?

Adiciona contexto e informações sobre os arquivos impactados.

Quais as desvantagens do histórico de cópias?

Manual, alto custo de manutenção e pouco detalhamento.

Qual a função do comando *patch*?

Aplicar as modificações dos arquivos **.diff* em um alvo, seja um outro arquivo ou pasta

Conceitos Chave

O que é um repositório?

Estrutura de controle de versão.

Quais comandos eu uso para inicializar um repositório?

```
$ git init  
$ git config user.name "..."  
$ git config user.email "..."
```

Quais as áreas especiais que compõem o git?

Árvore de trabalho (working tree), Staging Area e Repositório

O que o comando *git add* faz com um arquivo novo?

Indica ao git que é para começar a rastrear as mudanças dele, o colocando na staging area.

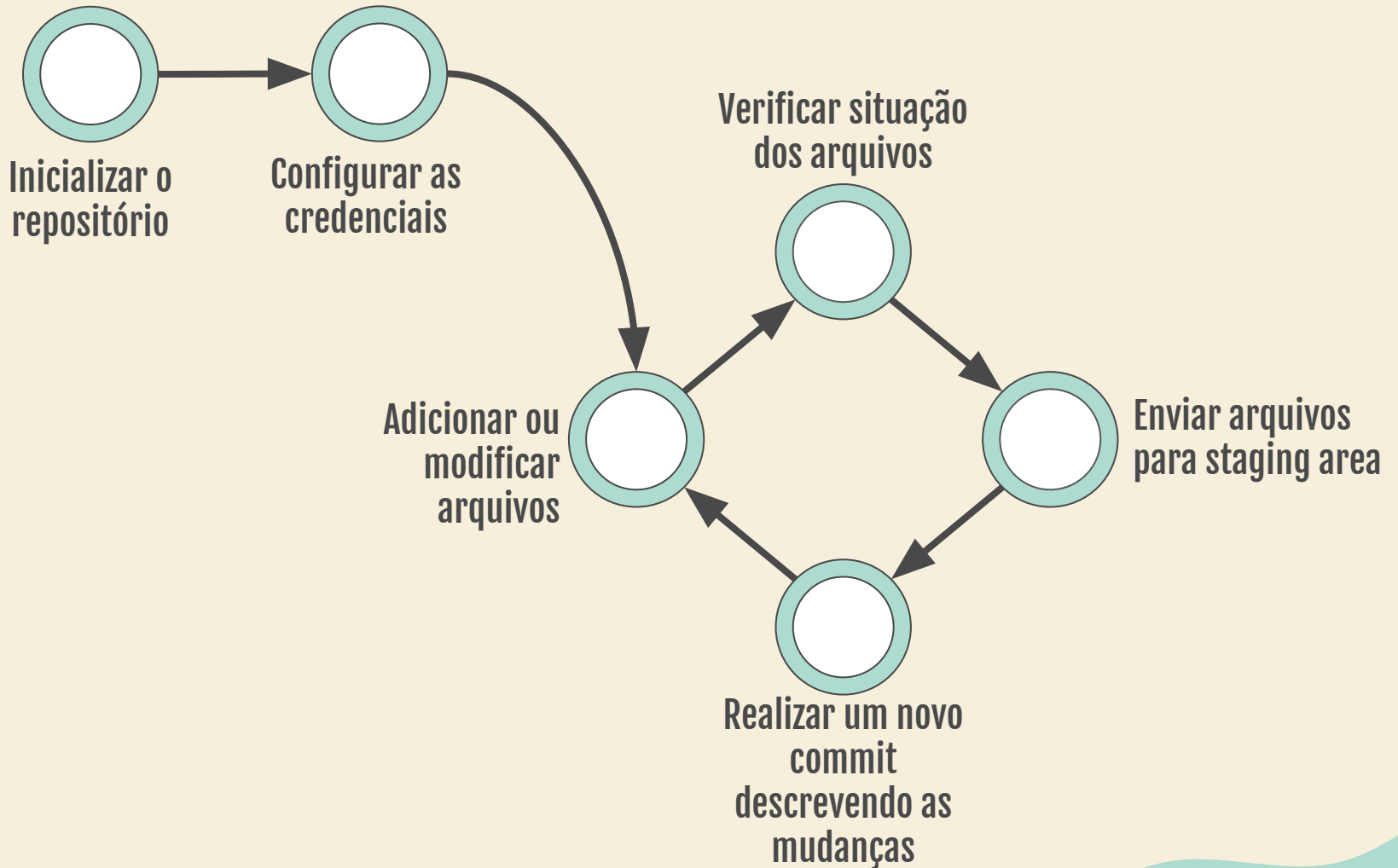
O que o comando *git commit* faz?

Envia as mudanças que estão na staging area para o repositório.

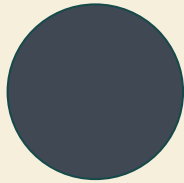
Como eu posso verificar todo o histórico de mudanças?

Utilizando o comando *git log*

Git workflow

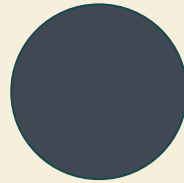


Nossos planos para hoje



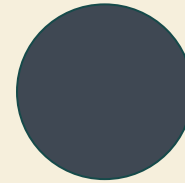
Interações avançadas

Muito além do 'add' e 'commit'.



Desfazendo as coisas

Ninguém acerta de primeira



Branchs e merges

Quando o trabalho começa a ficar muito grande



**CLONANDO
SEM SABER O
QUE É ISSO :-D**





\$ git clone

<https://github.com/carlosbarretoeng/carlosbarretoeng>

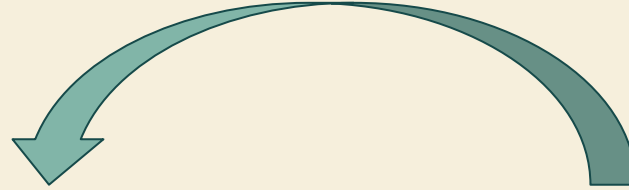




INTERAÇÕES AVANÇADAS COM O GIT



\$ git add ARQUIVO



\$ git commit



\$ git commit
\$ git commit -m "....."



\$ git commit -a -m “.....”



\$ git commit -a -m “.....”



Arquivos não rastreados
NÃO
serão enviados para a staging area

```
commit 53f768933e571694aa51d721d175cadd0faae44e (HEAD -> master, origin/master, origin/HEAD)
Author: Carlos Barreto <carlosbarreto.eng@gmail.com>
Date: Fri Nov 12 22:37:36 2021 -0300
```

Inserção da estrutura da semana 2 e do link para a apresentação

```
commit f84685d38ed8b8899505f1e64e31ac90032bf243
Author: Carlos Barreto <carlosbarreto.eng@gmail.com>
Date: Fri Nov 12 22:32:00 2021 -0300
```

Novas correções no README.md do início

```
commit 4449d774464767b548af2fc841e55dc24be395f6
Author: Carlos Barreto <carlosbarreto.eng@gmail.com>
Date: Fri Nov 12 22:30:40 2021 -0300
```

Nova correção

HEAD aponta para o último snapshot commitado. Seja localmente, seja remotamente. Ou seja, quase como um marcador de páginas em um livro.



Conseguindo mais informações do git

- `git log -p`
- `git log -stat`
- `git show #Id`
- `git add -p`
- `git diff`
- `git diff --staged`
- Rename e Delete
- `git rm`
- `git mv`
- `.gitignore`

Conseguindo mais informações do git

```
(1/1) Stage this hunk [y,n,q,a,d,e,?]? ?  
y - stage this hunk  
n - do not stage this hunk  
q - quit; do not stage this hunk or any of the remaining ones  
a - stage this hunk and all later hunks in the file  
d - do not stage this hunk or any of the later hunks in the file  
e - manually edit the current hunk  
? - print help  
@@ -7,7 +7,5 @@
```



DESFAZENDO AS COISAS

Desfazendo as coisas



```
carlos in carlosbarretoeng on □ master  
> git status  
On branch master  
Your branch is up to date with 'origin/master'.  
  
nothing to commit, working tree clean
```

Desfazendo as coisas



```
carlos in carlosbarretoeng on □ master
> git status
On branch master
Your branch is up to date with 'origin/master'.

Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
  (use "git restore <file>..." to discard changes in working directory)
      modified:   README.md

no changes added to commit (use "git add" and/or "git commit -a")
```



Desfazendo as coisas



```
carlos in carlosbarretoeng on □ master [!]  
> git checkout README.md  
Updated 1 path from the index  
carlos in carlosbarretoeng on □ master  
> git status  
On branch master  
Your branch is up to date with 'origin/master'.  
  
nothing to commit, working tree clean
```

Desfazendo as coisas



```
carlos in carlosbarretoeng on □ master [!]  
> git status  
On branch master  
Your branch is up to date with 'origin/master'.  
  
Changes not staged for commit:  
  (use "git add <file>..." to update what will be committed)  
  (use "git restore <file>..." to discard changes in working directory)  
        modified:   Semana1/README.md  
  
no changes added to commit (use "git add" and/or "git commit -a")
```

Desfazendo as coisas



```
carlos in carlosbarretoeng on □ master [!]  
> git add Semanal/README.md  
carlos in carlosbarretoeng on □ master [+]  
> git status  
On branch master  
Your branch is up to date with 'origin/master'.  
  
Changes to be committed:  
  (use "git restore --staged <file>..." to unstage)  
    modified:   Semanal/README.md
```


Desfazendo as coisas



```
carlos in carlosbarretoeng on □ master [+]
> git reset HEAD Semanal/README.md
Unstaged changes after reset:
M      Semanal/README.md
carlos in carlosbarretoeng on □ master [!]
> git status
On branch master
Your branch is up to date with 'origin/master'.

Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
  (use "git restore <file>..." to discard changes in working directory)
        modified:   Semanal/README.md

no changes added to commit (use "git add" and/or "git commit -a")
```

Desfazendo as coisas



git checkout -- ARQUIVO ⇔ git restore ARQUIVO

git reset HEAD ARQUIVO ⇔ git restore --staged ARQUIVO

Desfazendo as coisas



```
carlos in carlosbarretoeng on □ master [!]  
> git status  
On branch master  
Your branch is up to date with 'origin/master'.  
  
Changes not staged for commit:  
  (use "git add <file>..." to update what will be committed)  
  (use "git restore <file>..." to discard changes in working directory)  
    modified:   README.md  
    modified:   Semana1/README.md  
  
no changes added to commit (use "git add" and/or "git commit -a")
```



Desfazendo as coisas



```
carlos in carlosbarretoeng on  $\square$  master [!]  
> git add .  
carlos in carlosbarretoeng on  $\square$  master [+]  
> git status  
On branch master  
Your branch is up to date with 'origin/master'.  
  
Changes to be committed:  
  (use "git restore --staged <file>..." to unstage)  
    modified:   README.md  
    modified:   Semana1/README.md  
  
carlos in carlosbarretoeng on  $\square$  master [+]  
> git commit -m "Alteração no arquivo da Semana 1"  
[master e0eae56] Alteração no arquivo da Semana 1  
2 files changed, 1 insertion(+), 5 deletions(-)
```

Desfazendo as coisas



```
carlos in carlosbarretoeng on □ master [!]  
> git add .  
carlos in carlosbarretoeng on □ master [+]  
> git status  
On branch master  
Your branch is up to date with 'origin/master'.  
  
Changes to be committed:  
  (use "git restore --staged <file>..." to unstage)  
        modified:   README.md  
        modified:   Semana1/README.md  
  
carlos in carlosbarretoeng on □ master [+]  
[master e0eae56] Alteração no arquivo da Semana 1
```

Emendando as coisas



```
carlos in carlosbarretoeng on □ master [↑]
> git commit --amend -m "Alterando os arquivos da Página Inicial e da Se
mana 1"
[master 6c3d58e] Alterando os arquivos da Página Inicial e da Semana 1
Date: Sat Nov 13 00:08:09 2021 -0300
2 files changed, 1 insertion(+), 5 deletions(-)

carlos in carlosbarretoeng on □ master [↑]
+ > git log -2_

commit 6c3d58e53cdbef970fedba416cc068c80210e676 (HEAD -> master)
Author: Carlos Barreto <carlosbarreto.eng@gmail.com>
Date: Sat Nov 13 00:08:09 2021 -0300
```

Alterando os arquivos da Página Inicial e da Semana 1

```
commit 53f768933e571694aa51d721d175cadd0faae44e (origin/master, origin/H
EAD)
Author: Carlos Barreto <carlosbarreto.eng@gmail.com>
Date: Fri Nov 12 22:37:36 2021 -0300
```

Inserção da estrutura da semana 2 e do link para a apresentação

(END)_

Emendando as coisas



NUNCA EMENDEM EM PÚBLICO

Sério... isso atrapalha muito o movimento!

Revertendo as coisas



Revertendo as coisas



Revertendo as coisas



Revertendo as coisas

```
carlos in carlosbarretoeng on □ master [↑]  
✦ > git revert HEAD
```

```
/home/carlos/PESSOAL/carlosbarretoeng/.git/COMMIT_EDITMSG  
Revert "Alterando os arquivos da Página Inicial e da Semana 1"  
  
This reverts commit 6c3d58e53cdbef970fedba416cc068c80210e676.  
  
# Please enter the commit message for your changes. Lines starting  
# with '#' will be ignored, and an empty message aborts the commit.  
#  
# On branch master  
# Your branch is ahead of 'origin/master' by 1 commit.  
#   (use "git push" to publish your local commits)  
#  
# Changes to be committed:  
#       modified:   README.md  
#       modified:   Semana1/README.md  
#
```

```
carlos in carlosbarretoeng on □ master [↑]  
✦ > git revert HEAD  
[master e39b67e] Revert "Alterando os arquivos da Página Inicial e da Se  
mana 1"  
2 files changed, 5 insertions(+), 1 deletion(-)
```

Revertendo as coisas

**BACK
TO
THE PAST**

Revertendo as coisas

```
commit e39b67eb3578edc112943cdaf432a5bbaf627eda (HEAD -> master)
Author: Carlos Barreto <carlosbarreto.eng@gmail.com>
Date: Sat Nov 13 00:38:12 2021 -0300
```

Revert "Alterando os arquivos da Página Inicial e da Semana 1"

This reverts commit 6c3d58e53cdbef970fedba416cc068c80210e676.

```
commit 6c3d58e53cdbef970fedba416cc068c80210e676
Author: Carlos Barreto <carlosbarreto.eng@gmail.com>
Date: Sat Nov 13 00:08:09 2021 -0300
```

Alterando os arquivos da Página Inicial e da Semana 1

```
commit 53f768933e571694aa51d721d175cadd0faae44e (origin/master, origin/H
EAD)
Author: Carlos Barreto <carlosbarreto.eng@gmail.com>
Date: Fri Nov 12 22:37:36 2021 -0300
```

Inserção da estrutura da semana 2 e do link para a apresentação

```
commit f84685d38ed8b8899505f1e64e31ac90032bf243
Author: Carlos Barreto <carlosbarreto.eng@gmail.com>
Date: Fri Nov 12 22:32:00 2021 -0300
```

Novas correções no README.md do início

```
commit 4449d774464767b548af2fc841e55dc24be395f6
Author: Carlos Barreto <carlosbarreto.eng@gmail.com>
Date: Fri Nov 12 22:30:40 2021 -0300
```

Nova correção

Revertendo as coisas

```
carlos in carlosbarretoeng on □ master [↑] took 2m 7s
* > git show f84685d3
```

```
commit f84685d38ed8b8899505f1e64e31ac90032bf243
Author: Carlos Barreto <carlosbarreto.eng@gmail.com>
Date:   Fri Nov 12 22:32:00 2021 -0300
```

Novas correções no README.md do início

```
diff --git a/README.md b/README.md
```

```
index 9c9eb57..d3f69dc 100644
```

```
--- a/README.md
```

```
+++ b/README.md
```

```
@@ -1,12 +1,13 @@
```

```
<div align="center">
```

```
<h1>Git & Github</h1>
```

```
- <a href="https://github.com/carlosbarretoeng/carlosbarretoeng/tree/master/Cursos/Git%20%26%20Github"><h4>Semana 1</h4></a>
```

```
+ <a href="https://github.com/carlosbarretoeng/carlosbarretoeng/tree/master/Semana1"><h4>Semana 1</h4></a>
```

```
+
```

```
+ <a href="https://github.com/carlosbarretoeng/carlosbarretoeng/tree/master/Semana2"><h4>Semana 2</h4></a>
```

```
+
```


Revertendo as coisas

```
carlos in carlosbarretoeng on □ master [↑] took 2m 7s
♦ > git show f84685d3
```

```
commit f84685d38ed8b8899505f1e64e31ac90032bf243
Author: Carlos Barreto <carlosbarreto.eng@gmail.com>
Date:   Fri Nov 12 22:32:00 2021 -0300
```

```
carlos in carlosbarretoeng on □ master [↑] took 45s
♦ > git revert f84685d3
[master 980759f] Revert "Novas correções no README.md do início"
1 file changed, 12 insertions(+), 13 deletions(-)
rewrite README.md (74%)
```



RAMIFICANDO E UNINDO



Branch (Ramificação)

É um apontamento para um commit específico.



\$ git branch

```
carlos in carlosbarretoeng on ◻ master
```

```
> git branch
```

```
* master
```

```
(END)_
```

\$ git branch Semana 2

```
carlos in carlosbarretoeng on □ master  
> git branch  
  
* master  
(END)_
```

```
carlos in carlosbarretoeng on □ master  
> git branch Semana2  
  
carlos in carlosbarretoeng on □ master  
> git branch  
  
Semana2  
* master  
(END)_
```

\$ git checkout Semana2

```
carlos in carlosbarretoeng on □ master
```

```
> git branch
```

```
* master
```

```
(END)
```

```
carlos in carlosbarretoeng on □ master
```

```
> git branch Semana2
```

```
carlos in carlosbarretoeng on □ master
```

```
> git branch
```

```
    Semana2
```

```
* master
```

```
(END)
```

```
carlos in carlosbarretoeng on □ master took 4m 6s
```

```
> git checkout Semana2
```

```
Switched to branch 'Semana2'
```

```
carlos in carlosbarretoeng on □ master
```

```
> git branch
```

```
* Semana2
```

```
    master
```

```
(END)
```

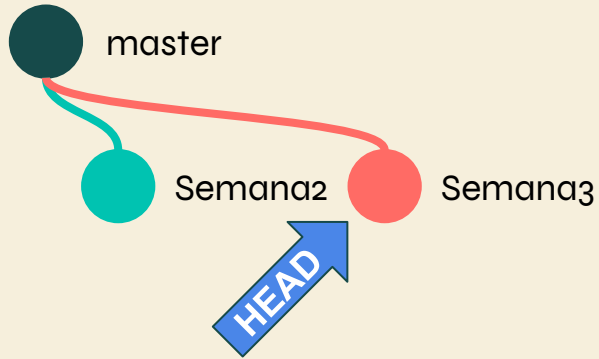


\$ git checkout -b Semana3

\$ git checkout -b Semana3



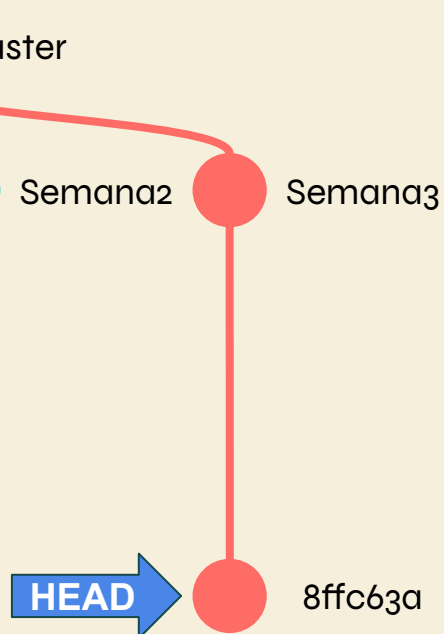
\$ git checkout -b Semana3



```
carlos in carlosbarretoeng on □ Semana3
> mkdir Semana3
carlos in carlosbarretoeng on □ Semana3
> touch Semana3/README.md
carlos in carlosbarretoeng on □ Semana3 [?]
> git status
On branch Semana3
Untracked files:
  (use "git add <file>..." to include in what will be committed)
    Semana3/

nothing added to commit but untracked files present (use "git add" to track)
```

\$ git checkout -b Semana3

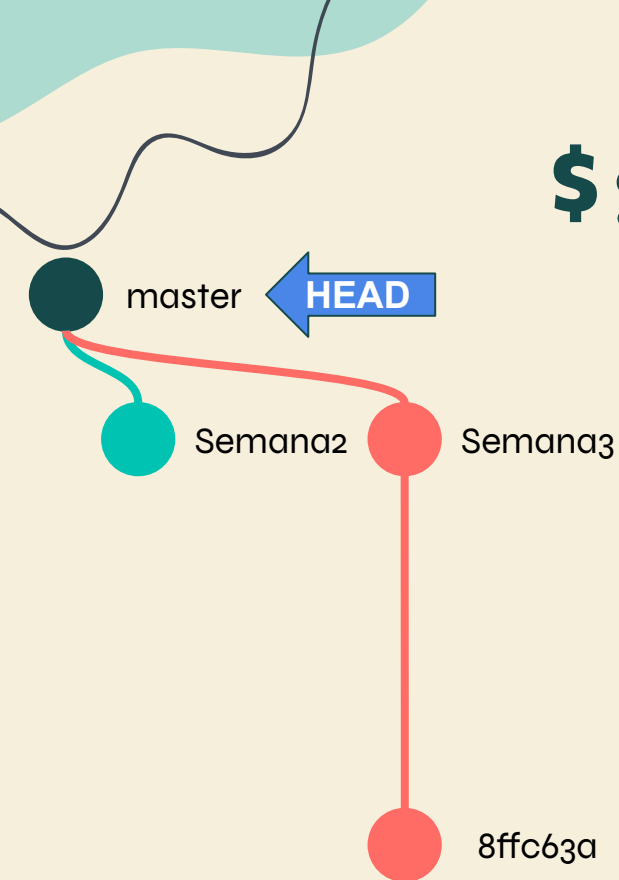


```
carlos in carlosbarretoeng on □ Semana3
> mkdir Semana3
carlos in carlosbarretoeng on □ Semana3
> touch Semana3/README.md
carlos in carlosbarretoeng on □ Semana3 [?]
> git status
On branch Semana3
Untracked files:
  (use "git add <file>..." to include in what will be committed)
    Semana3/

nothing added to commit but untracked files present (use "git add" to track)
```

```
carlos in carlosbarretoeng on □ Semana3 [?]
> git add Semana3/
carlos in carlosbarretoeng on □ Semana3 [+]
> git commit -m "Criando pasta para Semana 3 e o README.md dela"
[Semana3 8ffc63a] Criando pasta para Semana 3 e o README.md dela
1 file changed, 0 insertions(+), 0 deletions(-)
create mode 100644 Semana3/README.md
```

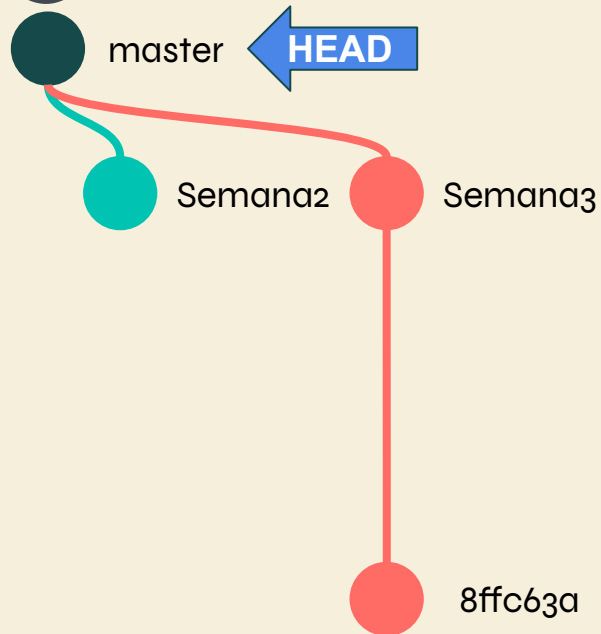

\$ git checkout master



```
carlos in carlosbarretoeng on □ Semana3
> git checkout master
Switched to branch 'master'
Your branch is up to date with 'origin/master'.
carlos in carlosbarretoeng on □ master
> git status
On branch master
Your branch is up to date with 'origin/master'.

nothing to commit, working tree clean
```

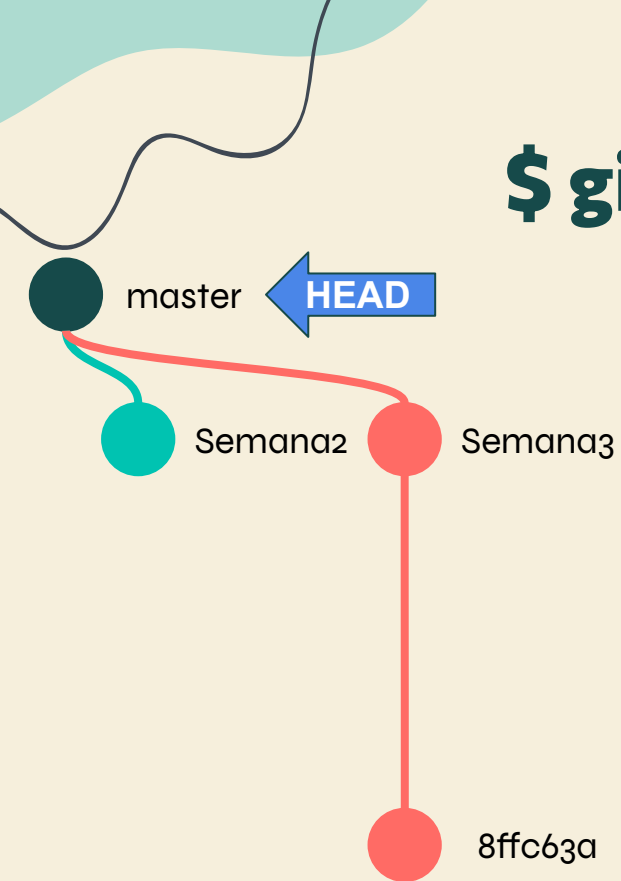
Onde foi parar a Semana 3?



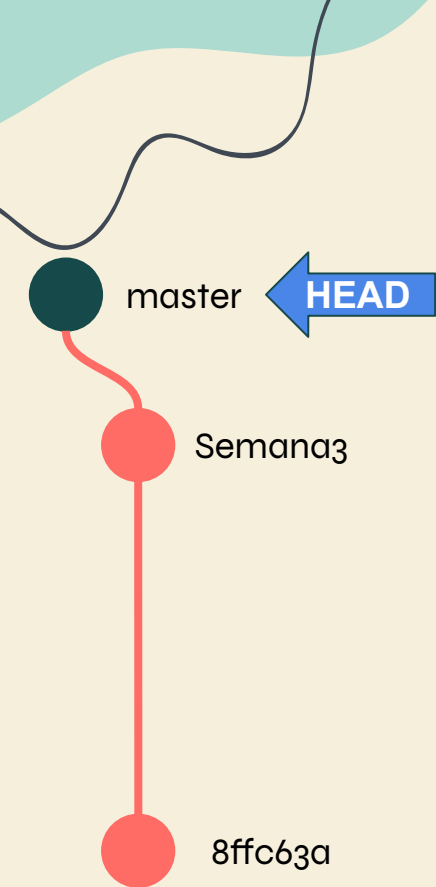
```
carlos in carlosbarretoeng on ✱ Semana3
> git checkout master
Switched to branch 'master'
Your branch is up to date with 'origin/master'.
carlos in carlosbarretoeng on ✱ master
> git status
On branch master
Your branch is up to date with 'origin/master'.

nothing to commit, working tree clean
```

\$ git branch -d Semana2

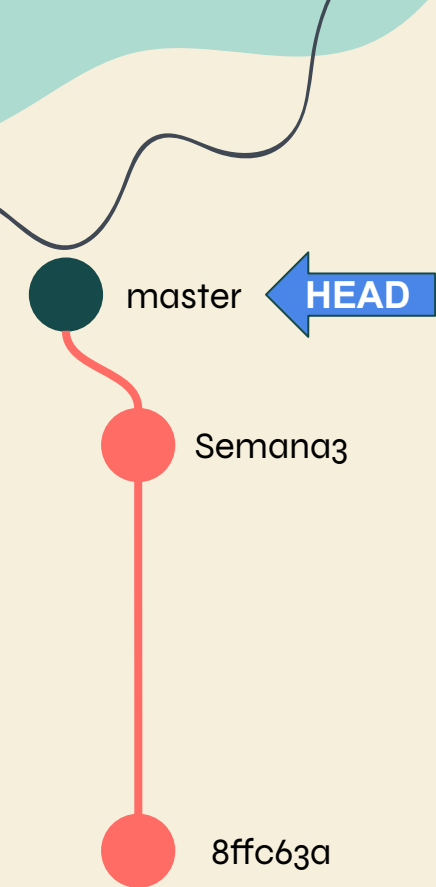


\$ git branch -d Semana2

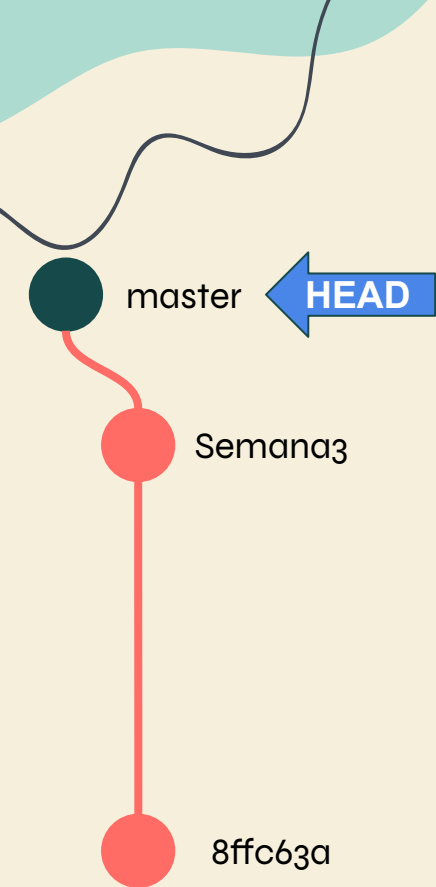


```
carlos in carlosbarretoeng on □ master
> git branch -d Semana2
Deleted branch Semana2 (was 53f7689).
carlos in carlosbarretoeng on □ master
> git branch
  Semana3
* master
(END)
```

\$ git branch -d Semana3



\$ git branch -d Semana3



```
carlos in carlosbarretoeng on □ master
```

```
> git branch -d Semana3
```


```
error: The branch 'Semana3' is not fully merged.
```

```
If you are sure you want to delete it, run 'git branch -D Semana3'.
```



Merge (Unificação)

É a combinação de duas branches em uma mesma linha do tempo, unificando seus arquivos.





Fast-Forward

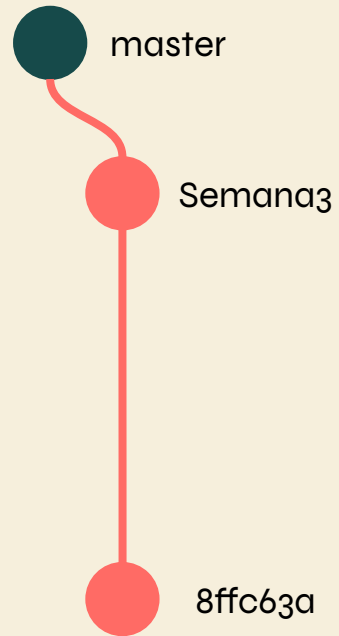
Quando duas branches apontam para o mesmo commit.



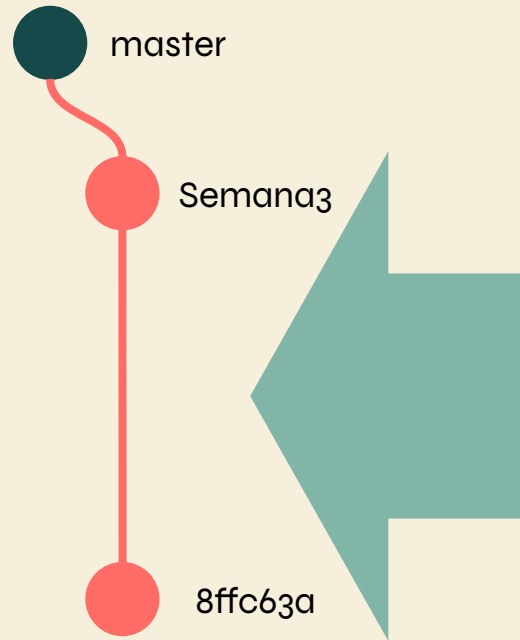
Three-way

Quando é necessária a criação um novo commit na branch de destino para unificar com a de origem

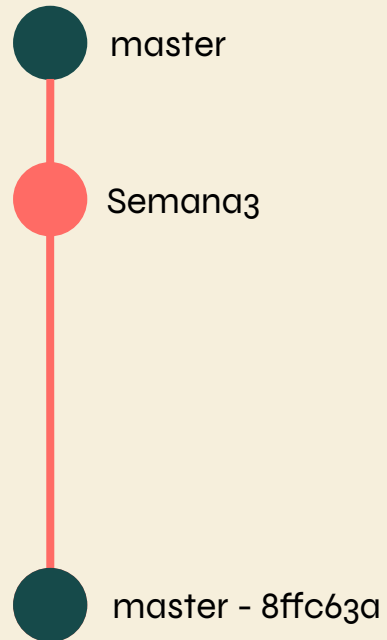
Fast-forward merge



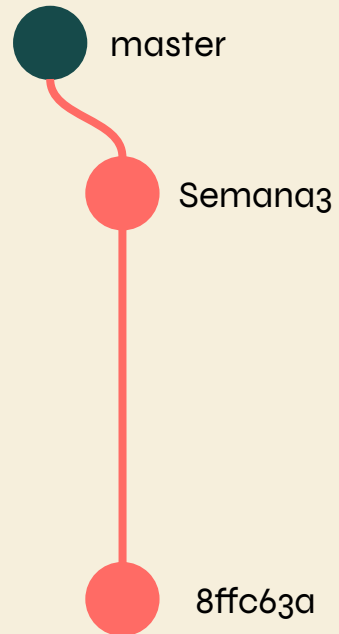
Fast-forward merge



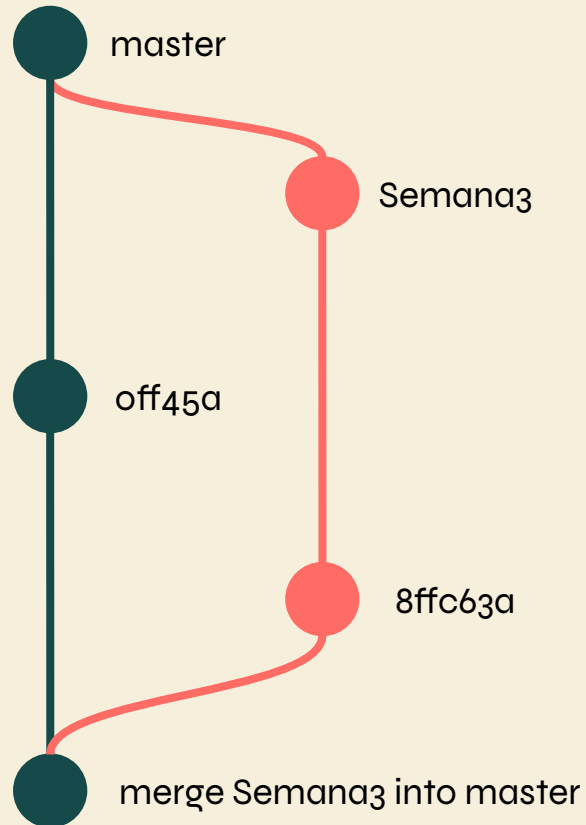
Fast-forward merge



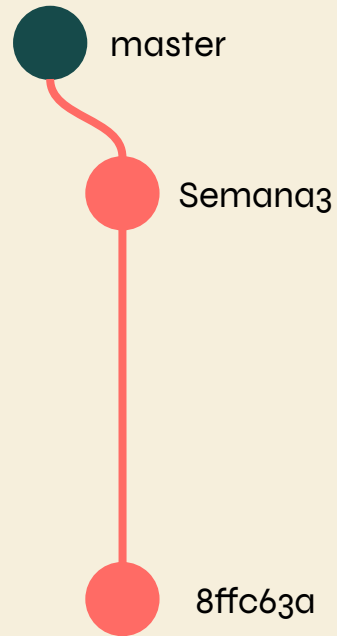
Three-way merge



Three-way merge



Qual será nosso algoritmo?

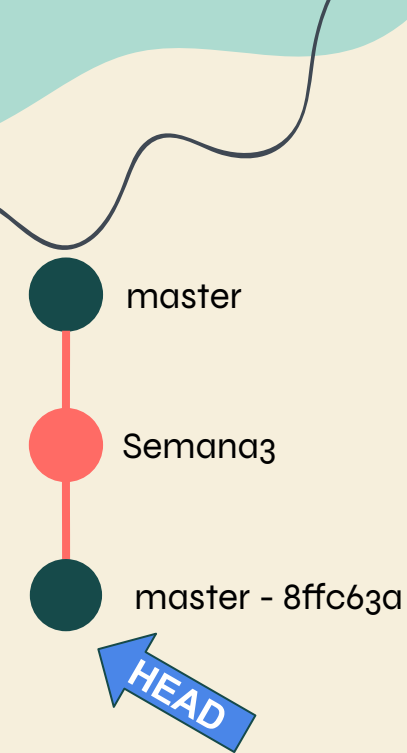


\$ git merge Semana3



```
carlos in carlosbarretoeng on □ master
> git merge Semana3
Updating 53f7689..8ffc63a
Fast-forward
 Semana3/README.md | 0
 1 file changed, 0 insertions(+), 0 deletions(-)
 create mode 100644 Semana3/README.md
```

\$ git merge Semana3



```
carlos in carlosbarretoeng on □ master
> git merge Semana3
Updating 53f7689..8ffc63a
Fast-forward
 Semana3/README.md | 0
 1 file changed, 0 insertions(+), 0 deletions(-)
 create mode 100644 Semana3/README.md
```




Conflitos no Merge



TNX A LOT!

